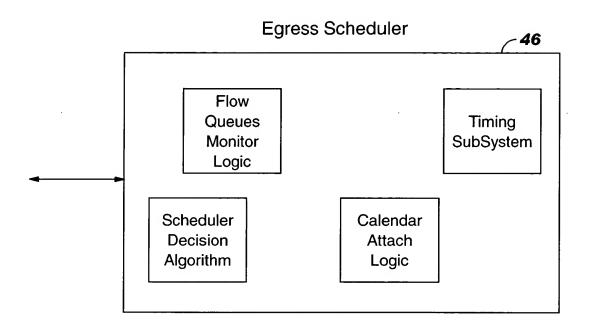
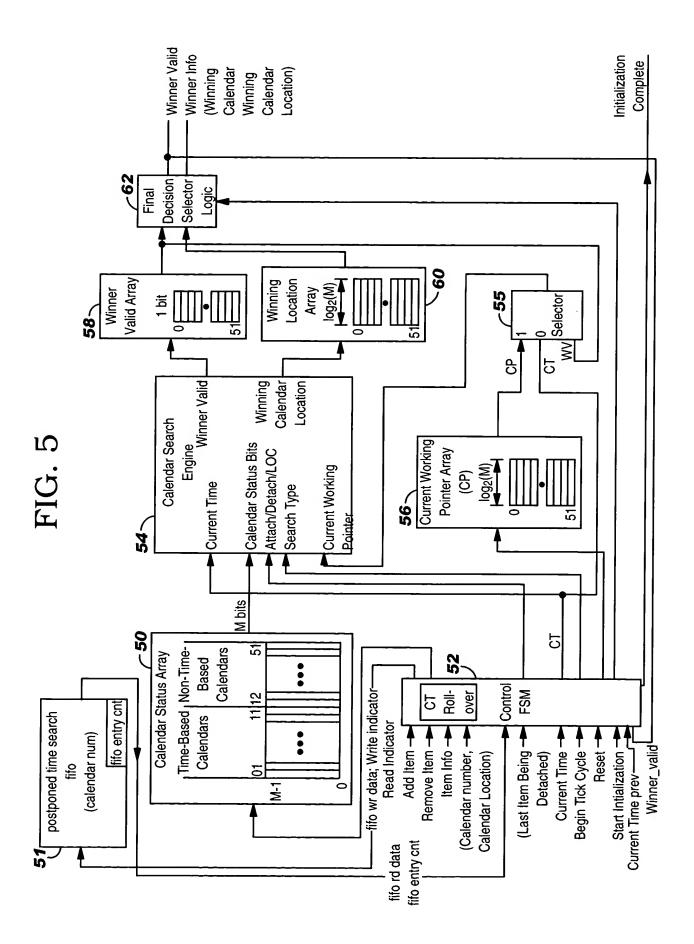


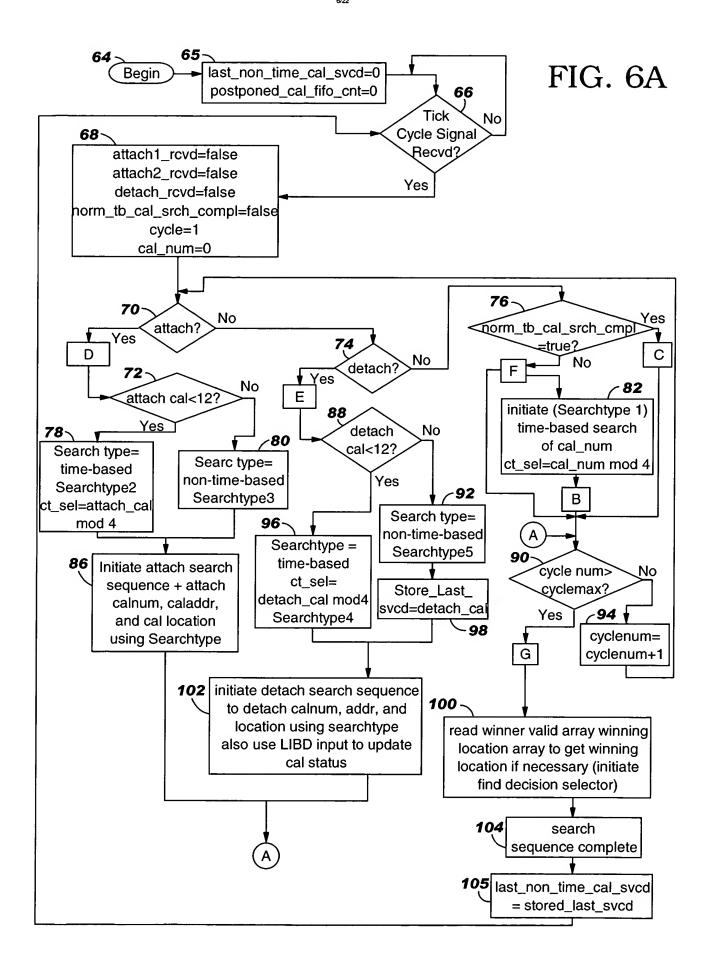
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FIG. 4







### FIG. 6B

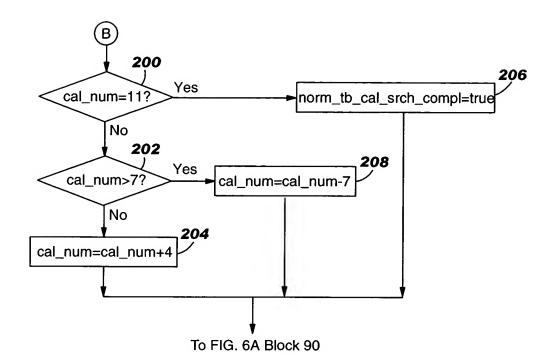
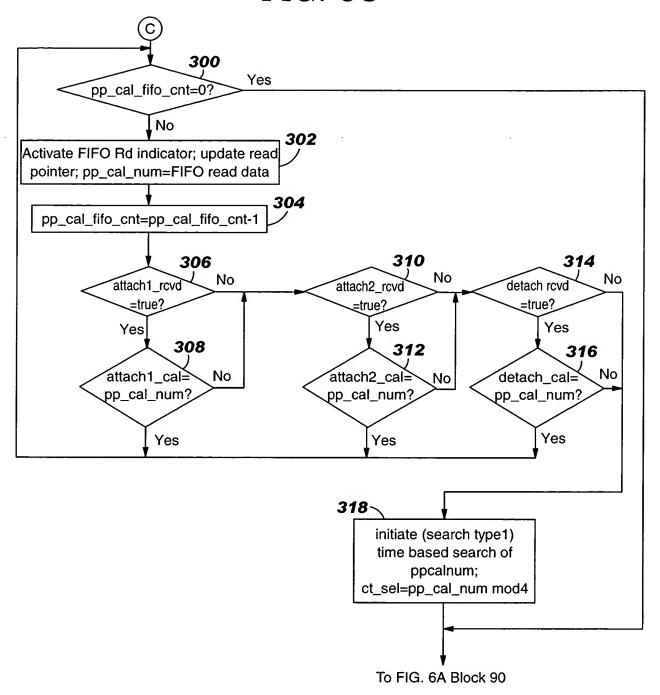
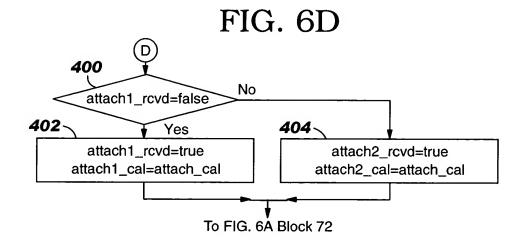
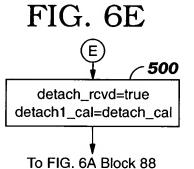
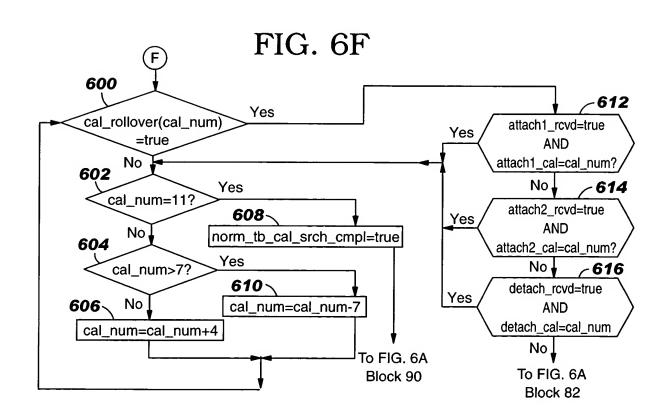


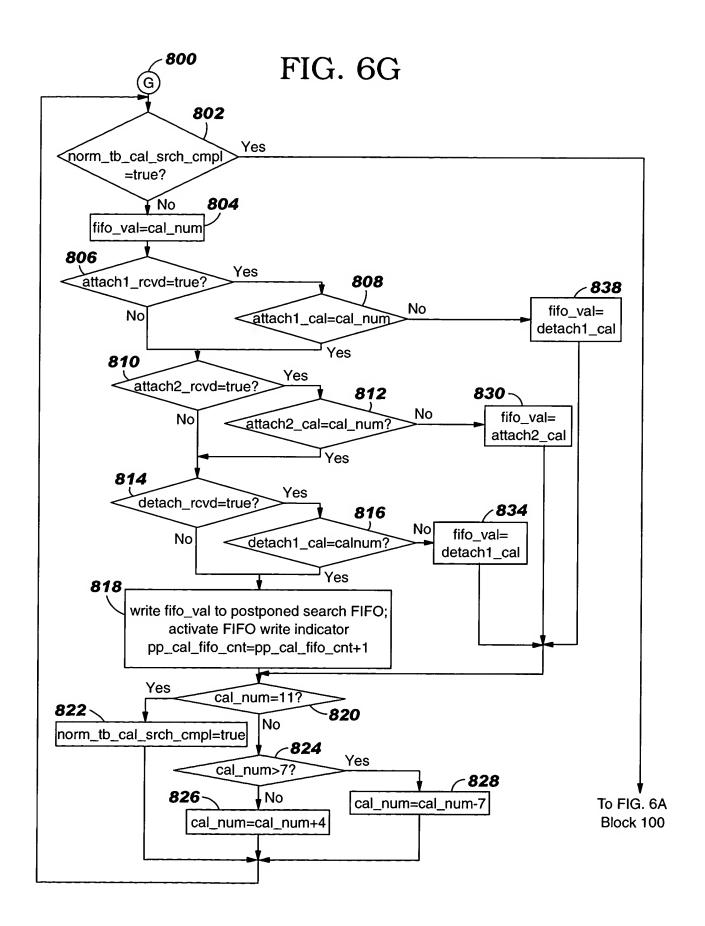
FIG. 6C











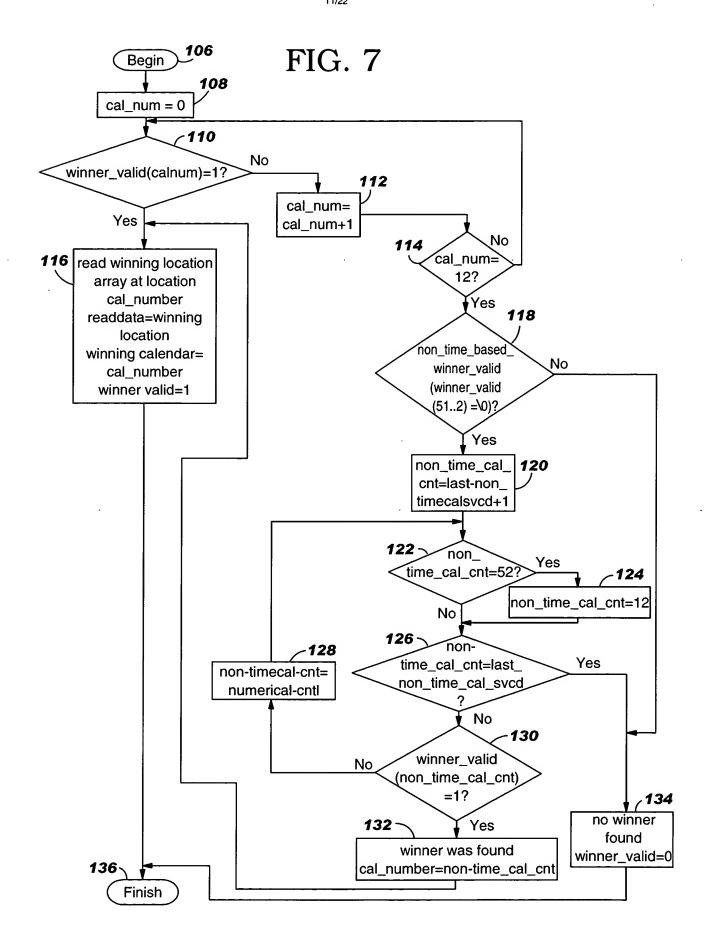
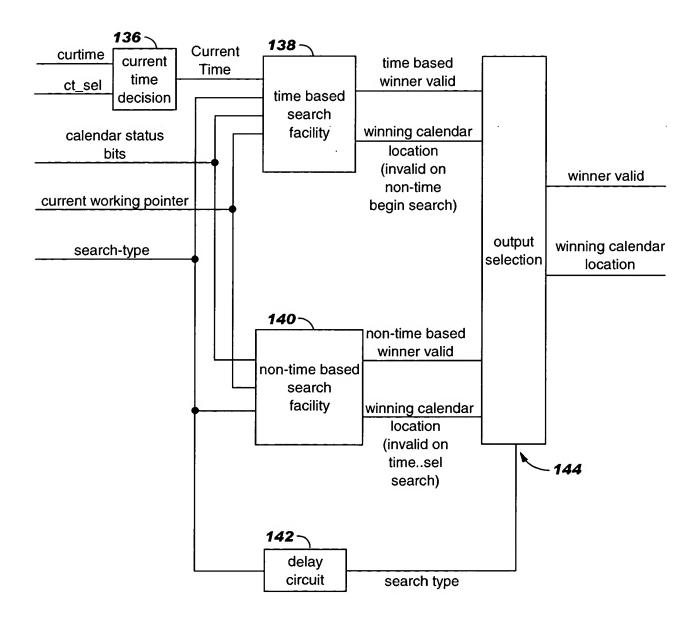


FIG. 8



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FIG. 9

### **TABLE I. Initialization**

Clock	Array	Array Name(s)	Access	Write Data
Cycle	Location		Туре	
Number				
1	0	Calendar Status	Write	All Zeroes
		CP	Write	All Zeroes
		Winner Valid	Write	Zero
2	1	Calendar Status	Write	All Zeroes
		CP	Write	All Zeroes
		Winner Valid	Write	Zero
3	2	Calendar Status	Write	All Zeroes
		CP	Write	All Zeroes
		Winner Valid	Write	Zero
4	3	Calendar Status	Write	All Zeroes
		CP	Write	All Zeroes
		Winner Valid	Write	Zero
		Calendar Status	Write	All Zeroes
		CP	Write	All Zeroes
		Winner Valid	Write	Zero
	•	Calendar Status	Write	All Zeroes
		CP	Write	All Zeroes
		Winner Valid	Write	Zero
•	•	Calendar Status	Write	All Zeroes
		CP	Write	All Zeroes
		Winner Valid	Write	Zero
50	49	Calendar Status	Write	All Zeroes
		CP	Write	All Zeroes
		Winner Valid	Write	Zero
51	50	Calendar Status	Write	All Zeroes
		CP	Write	All Zeroes
		Winner Valid	Write	Zero
52	51	Calendar Status	Write	All Zeroes
		CP	Write	All Zeroes
		Winner Valid	Write	Zero

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TABLE II. Search Sequence with Neither Attaches Nor Detaches

Clock	Array	Array Name(s)	٩	Write Data	Search Engine Inputs	Search Engine
ĭ	Location		Type			Output
	0	Calendar Status	Read	N/A	A/N	N/A
	0	SP	Read	N/A	N/A	N/A
	-	Calendar Status	Read	N/A	Calendar 0 Status	N/A
	<del>-</del>	CP	Read	N/A	Calendar 0 CP Time- based search	N/A
	2	Calendar Status	Read	N/A	Calendar 1 Status	Calendar 0 Search
	2	SP	Read	N/A	Calendar 1 CP	
	0	Winner Valid	Write	Search Engine Winner_Valid Output	Time-based Search	
	0	Winning Location	Write	Search Engine Winning_ Location Output		
	က	Calendar Status	Read	N/A	Calendar 2 Status	Calendar 1 Search
	3	CP	Read	N/A	Calendar 2 CP	
	-	Winner Valid	Write	Search Engine Winner_Valid Output	Time-based Search	
	1	Winning Location	Write	Search Engine Winning_ Location Output		
	4	Calendar Status	Read	Y/N	Calendar 3 Status	. Calendar 2 Search
	4	సి	Read	N/A	Calendar 3 CP	
	2	Winner Valid	Write	Search Engine Winner_Valid Output	Time-based Search	
	2	Winning Location	Write	Search Engine Winning_ Location Output		
	5	Calendar Status	Read	V/N	Calendar 4 Status	Calendar 3 Search
1						

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# FIG. 10 (cont'd)

### TABLE II (cont'd)

			Calendar 4 Search				Calendar 5 Search					Calendar 9 Search				Calendar 10 Search			
Calendar 4 CP	Time-based Search		Calendar 5 Status	Calendar 5 CP	Time-based Search		Calendar 6 Status	Calendar 6 CP	Time-based Search			Calendar 10 Status	Calendar 10 CP	Time-based Search		Calendar 11 Status	Calendar 11 CP	Time-based Search	
N/A	Search Engine Winner_Valid Output	Search Engine Winning_ Location Output	N/A	N/A	Search Engine Winner_Valid Output	Search Engine Winning_ Location Output	N/A	N/A	Search Engine Winner_Valid Output	Search Engine Winning_ Location Output		N/A	N/A	Search Engine Winner_Valid Output	Search Engine Winning_ Location Output	N/A	N/A	Search Engine Winner_Valid Output	Search Engine Winning_ Location Output
Read	Write	Write	Read	Read	Write	Write	Read	Read	Write	Write		Read	Read	Write	Write	Read	Read	Write	Write
CP	Winner Valid	Winning Location	Calendar Status	SP	Winner Valid	Winning Location	Calendar Status	g S	Winner Valid	Winning Location		Calendar Status	CP	Winner Valid	Winning Location	Calendar Status	CP	Winner Valid	Winning Location
5	င	3	9	9	4	4	7	7	သ	5		11	11	6	6	N/A	N/A	10	10
9	9	9	7	2	2	7	8	8	8	8	•	12	12	12	12	13	13	13	13

FIG. 10 (cont'd)

## TABLE II (cont'd)

Calendar 11 Search				Winner_Valid and	Winner Info is at the	output							
N/A	N/A			N/A									
A/N	N/A	Search Engine Winner_Valid Output	Search Engine Winning_ Location Output	N/A								N/A	
N/A	N/A	Write	Write	Read								Read	
N/A	N/A	Winner Valid	Winning Location	Winning	Location							Winning	location
N/A	W/A	11	11	1st winner	found in	Winner	Valid Array	No Activity	No Activity	No Activity	No Activity	Winning	Index
14	14	14	14	15				16	17	18	19	20	

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FIG. 11

TABLE III. Type I Search

Clock	Array	Array   Array Name(s)	Access	Write Data	Search Engine	Search Engine	Comments
Cycle	_		Type		Inputs	Output	
Number			•				
1	Z	Calendar Status	Read	N/A	N/A	N/A	Cycle initiated
-	z	Winner_Walid	Read	N/A	N/A	N/A	If the Winner_valid value for
							location Nis logic 0, the CP value
							that is presented to the search
							engine on cycle 2 will be equal to
							the Calendar NCT, as per the
							algorithm definition
-	z	CP	Read	A/A	N/A	V/A	
2	A/N	N/A	N/A		Calendar N Status	N/A	First cycle of Calendar N Search,
					Calendar N CP		No attaches nor detaches
					Calendar N CT		
					Time-based Search		
			-		No Attach		
					No Detach		
3	z	Winner Valid	Write	Search Engine	N/A	Winner_Valid and	
				Winner_ValidOutput		Winning_Location	
က	z	Winning Location	Write	Search Engine	A/N		
				Winning_Location			
				Output			

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FIG. 12

TABLE IV. Type II Search

N Calendar Read N/A	Clock	Array	Array Name(s)	Access	Write Data	Search Engine	Search Engine	Comments
N   Calendar   Read   N/A   N/A   N/A   N/A	cie nber	Location		Туре		Inputs	Output	
N         Winner_Walid         Read         N/A         N/A <th< td=""><td>_</td><td>z</td><td>Calendar Status</td><td>Read</td><td>N/A</td><td>N/A</td><td>N/A</td><td>Cycle initiated. Calendar attach location is at input to structure</td></th<>	_	z	Calendar Status	Read	N/A	N/A	N/A	Cycle initiated. Calendar attach location is at input to structure
N CP Read N/A N/A N/A N/A N/A N/A N/A Calendar N Status Calendar N CP Calendar Search Attach Indication Attach Indication Attach Indication Attach Indication Attach Indication Attach Indication Output N/A Winning Location Output N/A Winning Location Output N/A Status Corresponding to attach location Corresponding to attach location (other bits) Direserved)	_	z	Winner_Walid	Read	N/A	N/A	N/A	If the Winner_Valid value for
N CP Read N/A Calendar N Status Calendar N Status Calendar N CP Calendar Attach Indication Attach Calendar And Location Output N Winning Location Output N Calendar Write Search Engine Location Output Output N Calendar Write Logic It bit Calendar N/A Winning Location Output Calendar N/A Winning Location Output Calendar N CP Calendar N Winner-Valid and Winning Location Output Calendar N N/A Winning Location Output Calendar N/A N/A Winning Location Output Calendar N/A N/A Winning Location Output Calendar N/A								location N is logic 0, the CP
NA N/A N/A Calendar N Status Calendar N CP Calendar N CT Time-based Search N Winning Write Search Engine Altach Indication N Winning Write Search Engine Altach Calendar N Winning Write Search Engine Altach N Calendar Write Logic 1 to bit Status Corresponding to attach location Contresponding to attach location Corresponding								search engine on cycle 2 will be
N/A N/A N/A Calendar N Status  Calendar N Status  Calendar N Status  Calendar N Status  Calendar N CP  Calendar N CA  Calendar N CP  Calendar N Withe Search Engine  Output  Calendar N Winner L Calendar  Output  Calendar N Minner L Calendar  Output  Calendar N	_							the Calendar N CT, as per the
NA N/A N/A Calendar N Status Calendar N Status Calendar N CP Calendar N CT Time-based Search Attach Indication Attach Calendar and Location N Winning Write Search Engine N Winning Location Output N Winning Write Search Engine N Winning Location Output N Calendar N/A Winning Location Output N Calendar N/A Ninning Location Output Doubtut N/A Ninning Location Output N/A Ninning Location Output Doubtut N/A Ninning Location Output N/A Ninning Location Output Doubtut Doubtut Doubtut Doubtut N/A Ninning Location Output Doubtut Doubtut N/A Ninning Location Output Doubtut Doubtut N/A Ninning Location Output Doubtut Doubtut Doubtut Doubtut Doubtut N/A Ninning Location Output Doubtut Doubtut Doubtut Doubtut N/A Ninning Location Output Doubtut Doub								algorithm definition. If the value
N/A N/A N/A Calendar N Status Calendar N Status Calendar N CP Calendar N CT Calendar N CT Calendar N CT Time-based Search Search Indication Attach Indication Attach Calendar and Location Output N/A Winning Write Search Engine N/A Winning Location Output Calendar Write Cogic 1 to bit Position Corresponding to attach location Output Corresponding to attach location Corresponding to attach locati								is logic 1, the CP_array read
NA N/A N/A Calendar N Status  Calendar N CP Calendar N CP Calendar N CT Time-based Search Attach Indication Attach Calendar Winner Valid Winner Valid Winning Write Search Engine N/A Winning Location Output N Winning Location Output N/A Winning Location Output N/A Winning Location Output N/A Winning Location Output N/A Winning Location Output Calendar Write Search Engine N/A Winning Location Output N/A Winning Location Output Calendar Write Search Engine N/A Winning Location Output Output N/A Winning Location Output Corresponding to attach location Corresp								data will be the CP value used.
N/A N/A N/A Calendar N Status  Calendar N CP Calendar N CP Calendar N CT Time-based Search Search Indication Attach Indication Attach Calendar and Location Output N Winning Write Search Engine N/A Winning-Location Output N Winning Location Output N Calendar Winning Location Output N Winning Location Output N Winning Location Output Calendar N/A Winning-Location Output N/A Winning-Location Output Output Calendar N/A Winning-Location Output Output N/A Winning-Location Output Calendar N/A Winning-Location Output Output Output Calendar N CT N/A Winning-Location Output Output Calendar N CT N/A Winning-Location Output Output Calendar N/A Winning-Location Output Calendar N CT N/A Winning-Location Output Calendar N/A		į		7000	V/14	V/14	47.4	(Time-based searches only)
N/A N/A N/A N/A Calendar N Status Calendar N CP Calendar N CP Calendar N CT Time-based Search Search Attach Indication Attach Indication Attach Indication Attach Calendar Attach Calendar N Winning Write Search Engine N Calendar Write Search Engine Output N Calendar Write Search Engine Output Out	_	z	J	неад	N/A	N/A	N/A	
N Winning Write Search Engine N/A Winning Location Output Location Output N/A Status Corresponding to attach location or attach location (other bosition or attach location or attach location (other bits)	N	N/A	N/A	N/A		Calendar N Status		First cycle of Calendar N
N Winning Write Search Engine N/A Winning_Location Output N/A Winning Location N Calendar N CT Time-based Search Note Search Engine N/A Winning_Location Output N/A Status N Calendar Write Logic 1 to bit position corresponding to attach location (other bits)						Calendar N CP		Search. The Search Engine
N Winning Write Search Engine N/A Winning_Location Output N/A Winning Location Output Output N Calendar Write Search Engine N/A Winning_Location Output Output N Calendar Write Logic 1 to bit position corresponding to attach location (other bits preserved)						Calendar N CT		takes into account that the
Search Attach Indication Attach Calendar and Location Ninner Valid Write Search Engine N/A Winning_Location Output N Winning Write Search Engine N/A Location Output N Calendar Write Logic 1 to bit position Status Corresponding to attach location (other bits preserved)						Time-based		Calendar Status does not reflect
N Winner Valid Write Search Engine Attach Calendar and Location N Winning Write Search Engine N/A Winning_Location Output N/A Location Output N/A Location Output N/A Northe Logic 1 to bit N/A Status corresponding to attach location (other bits preserved)	_					Search		the current attach. State of the
N Winner Valid Write Search Engine Attach Calendar and Location  N Winning Write Search Engine N/A Winning Location  Output Output  Location Output  N Calendar Write Logic 1 to bit position  Status corresponding to attach location (other bits preserved)						Attach Indication		"pre-updated" attach status bit is
N Winner Valid Write Search Engine N/A Winner_Valid and Winner_Valid Minner_Valid Minning_Location Output N/A Winning Location Output N/A Winning Location Output N/A Status Corresponding to attach location (other bits preserved)						Attach Calendar		reported to the top-level Egress
N Winner Valid Write Search Engine N/A Winner_Valid and Winner_Valid Winning_Location Output N/A Winning Location Location Winning Location Output N/A N/A N/A position Status Corresponding to attach location (other bits preserved)						arid Location		scheduler structure
N Winning Write Search Engine N/A Location Winning Location Output Output N Calendar Write Logic 1 to bit N/A Status position corresponding to attach location (other bits	ო	z	Winner Valid	Write	Search Engine Winner_Valid	V/A	Winner_Valid and Winning_Location	
N Winning Write Search Engine N/A Location Winning Location Output Output N Calendar Write Logic 1 to bit Status corresponding to attach location (other bits preserved)					Output			
Location Winning Location Output Output N Calendar Write Logic 1 to bit N/A Status position corresponding to attach location (other bits preserved)	က	z	Winning	Write	Search Engine	W/A		
N Calendar Write Logic 1 to bit N/A N/A Status position corresponding to attach location (other bits preserved)			Location		Winning Location Output			
corresponding to attach location (other bits	က	z	Calendar	Write	Logic 1 to bit	N/A	N/A	Calendar status now reflects the
attach location (other bits preserved)			Status		position			attach.
(other bits preserved)					corresponding to			
Original Disserved)					attach location			
					(Duner Dits			

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FIG. 13

TABLE V. Type III Search

ngine Comments ut	Cycle Initiated. Calendar attach location is at input to structure		First cycle of Calendar M Search. The Search Engine takes into account that the Calendar Status does not reflect the current attach. State of the "pre-updated" attach status bit is reported to the top-level Egress Scheduler Structure	ulid and ocation		Calendar Status Array now reflects the attach.
Search Engine Output	A/N	N/A		Winner_Valid and Winning_Location		N/A
Search Engine Inputs	N/A	N/A	Calendar M Status Calendar N CP (CP Array Read Data) Non-Time-based Search Attach Indication Attach Calendar and Location	V/N	N/A	N/A
Write Data	N/A	N/A		Search Engine Winner_Valid Output	Search Engine Winning_ Location Output	Logic 1 to bit position corresponding to attach location (other bits
Access Type	Read	Read	N/A	Write	Write	Write
Array Name(s)	Calendar Status	GD.	N/A	Winner Valid	Winning Location	Calendar Status
Array Location	Σ	W	N/A	Σ	×	Σ
Clock Cycle Number	-	1	N	ဇ	ဇ	က

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FIG. 14

TABLE VI. Type IV Search

	اح م	Т	5000000	1	T	7001000	Γ	
Comments	Oyde initiated. Calendar attach location is at input to structure		If the Winner_valid value for location N is logic 0, the CP value that is presented to the search regime on cycle 3 will be the Calendar NCT, as per the algorithm definition. If the value is logic 1, the CP_array read data will be the CP value used. (Time-based searches only)			First cycle of Calendar N Search. The Search Engine takes into account that the Calendar Status chosen or reflect the current attach. State of the "pre-updated" attach status bits reported to the top-level Egress Scheduler Structure		
Search Engine Output	N/A A	N/A	N/A	N/A			Winner_Valid and Winning_Location	
Search Engine Inputs	A/N	N/A	A/A	N/A		Calendar N Status Calendar N CP Calendar N CT Time-based Search Attach Indication Attach Calendar and Location	N/A	N/A
Write Data	Withe inverse of LIBD input to backforth controlled the Calendar detach location. Other bits preserved	N/A	N/A	N/A	Calendar Detach Location		Sæich Ergne Winner_Vald Output	Search Engine Winning Location Output
Access Type	Write	Read	Read	Read	Write	N/A	Write	Write
Array Name(s)	Calendar Status	Calendar Status	Winner_Walid	CP	CP	W/A	WinnerValid	WinningLocation
Array Location	Z	z	Z	Z	z	N/A	z	z
Clock Cycle Number	-	5	2	2	3	က	4	4

TABLE VII. Type V Search

Clock	Array	Array Name(s)	Access	Write Data	Search Engine	Search Engine	Comments
Cycle Number	Location		Туре		Inputs	Output	
_	Z	CalendarStatus	Write	Write inverse of LIBD input	A/A	N/A	Oyde initiated. Calendar attach
				to location corresponding to			location is at input to structure
				the Calendar detach			
				location. Other bits preserved			
2	Σ	CalendarStatus	Read	N/A	N/A	N/A	Oyde Initiated Calendar attach
							location is at input to structure
2	Σ	CP	Read	N/A	A/N	N/A	
က	N/A	N/A	W/A		Calendar M Status		First cycle of Calendar M
					Calendar N CP (CP		Search. The Search Engine
					Array Read Data)		takes into account that the
		6			Non-Time-based		Calendar Status does not reflect
					Search		the current attach. State of the
					Attach Indication		"pre-updated" attach status bit is
					Attach Calendar and		reported to the top-level Egress
					Location		Scheduler Structure
4	Σ	Winner Valid	Write	Search Engine	W/A	Winner_Valid and	
				Winner_Valid Output		Winning_Location	
4	Σ	Winning Location	Write	Search Engine	N/A		
				Winning Location Output			
4	Σ	<b>Calendar Status</b>	Write	Logic 1 to bit position	A/N	N/A	Calendar Status Array now
- <del>-</del>				corresponding to attach			reflects the attach.
				location (other bits			
				preserved)			

FIG. 16

